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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,714	09/17/2003	Daijiro Inoue	57810-076	2234

7590 03/11/2005

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EXAMINER	
SEFER, AHMED N	

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/663,714	INOUE ET AL.	
	Examiner	Art Unit	
	A. Sefer	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) 8,10,13 and 17-22 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-7,9,11,12,14-16 and 23 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 12/2003.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species IV, directed to Embodiment 4 as shown in Fig. 14 (claims 1-7, 9, 11, 12, 14-16 and 23) in the reply filed on 2/15/2005 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6, 7, 9, 15 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kwak et al. ("Kwak") US PG-Pub 2002/0074556.

Kwak discloses (figs. 9-12 and pars. 0056 and 0060-0062) a nitride-based semiconductor light-emitting device comprising: a first conductivity type first nitride-based semiconductor layer 158 formed on a substrate or first conductivity GaN substrate (as in claim 23); an active layer 160, formed on said first nitride-based semiconductor layer, consisting of a nitride-based semiconductor layer; a second conductivity type second nitride-based semiconductor layer 162a consisting AlGaN (as in claim 3) formed on said active layer; an undoped contact layer 164 having a band gap smaller than the band gap of said second nitride-based semiconductor layer (as in claim 2) formed on said second nitride-based semiconductor layer; and an electrode 168 formed on said undoped contact layer.

Regarding claim 4, Kwak discloses a first conductivity type first nitride-based semiconductor layer being an n-type first nitride-based semiconductor layer, and said second conductivity type second nitride-based semiconductor layer being a p-type second nitride-based semiconductor layer.

Regarding claims 6 and 7, Kwak discloses said undoped contact layer containing InGaN (as in claim 7) having a band gap larger than the band gap of said active layer.

Regarding claim 9, Kwak discloses undoped contact layer being constituted of a single undoped nitride-based semiconductor layer.

Regarding claim 15, Kwak discloses a second conductivity type second nitride-based semiconductor layer including a second conductivity type cladding layer having a projection 162b, said undoped contact layer being formed on the upper surface of said projecting portion of said second conductivity type cladding layer, and said projecting portion of said second conductivity type cladding layer and said undoped contact layer constitute a ridge portion.

4. Claims 1-7, 9, 11, 12, 14, 16 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Hata et al. ("Hata") US Pg-Pub 2002/0190263.

The applied reference has a common assignee/inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Hata discloses (figs. 10 and 14 and pars. 0181-0186) a nitride-based semiconductor light-emitting device comprising: a first conductivity type first nitride-based semiconductor layer 4 formed on a substrate or first conductivity GaN substrate (as in claim 23); an active layer 5/15, formed on said first nitride-based semiconductor layer, consisting of a nitride-based semiconductor layer; a second conductivity type second nitride-based semiconductor layer 7/67 consisting AlGaN (as in claim 3) formed on said active layer; an undoped contact layer 69/99 having a band gap smaller than the band gap of said second nitride-based semiconductor layer (as in claim 2) formed on said second nitride-based semiconductor layer; and an electrode 10 formed on said undoped contact layer.

Regarding claim 4, Hata discloses a first conductivity type first nitride-based semiconductor layer being an n-type first nitride-based semiconductor layer, and said second conductivity type second nitride-based semiconductor layer being a p-type second nitride-based semiconductor layer.

Regarding claims 5 and 9, Hata discloses (pars. 0130 and 0212) undoped contact layer being constituted of a single undoped nitride-based semiconductor layer (as in claim 9) and having a thickness within the range recited in the claim.

Regarding claims 6 and 7, Hata discloses (par. 0185) said undoped contact layer containing InGaN (as in claim 7) having a band gap larger than the band gap of said active layer.

Regarding claim 11, Hata discloses (fig. 1) an undoped third nitride-based semiconductor layer 6, formed at least between an active layer 5 and a second conductivity type second nitride-based semiconductor layer 7, consisting of a nitride-based semiconductor having a smaller band gap than said second nitride-based semiconductor layer.

Regarding claim 12, Hata discloses (fig. 1) undoped third nitride-based semiconductor layer 6 being formed only between said active layer and said second nitride-based semiconductor layer in the interspaces between said active layer and said first and second conductivity type first and second nitride-based semiconductor layers.

Regarding claim 14, Hata discloses said second conductivity type second nitride-based semiconductor layer includes a second conductivity type second nitride-based semiconductor layer consisting of AlGaN, and said undoped third nitride-based semiconductor layer includes an undoped third nitride-based semiconductor layer consisting of GaN.

Regarding claim 16, Hata discloses in fig. 1 an active layer consisting of a nitride-based semiconductor containing In, said nitride-based semiconductor light-emitting device further comprising a protective layer 6 of a nitride-based semiconductor layer formed on said active layer for preventing In contained in said active layer from desorption.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

ANS
March 2, 2005